

60. The method of claim 58 wherein said shaft core has a grip portion and wherein said outer ply having metal-coated fibers is sheet wrapped around said grip portion.

61. The method of claim 59 wherein said metal coated fibers are coated with nickel.

REMARKS

Claims 28-32 and 53-61 are pending. Claims 28-32 stand preliminarily rejected. In response to the written opinion of February 14, 2002, reconsideration is respectfully requested.

Election/Restriction

Applicant affirms the provisional election to claims 28-32 as elected by telephone conference on February 1, 2002.

Information Disclosure Statement

The Information Disclosure Statement filed on November 27, 2001 has been objected to for not including a copy of the references cited. The cited references on the IDS were considered in the parent case hereto, to which priority under 35 U.S.C. §120 is claimed. In accordance with MPEP §609, the references should have been automatically considered. Since the references were in the parent case, in accordance with MPEP §609 and 37 C.F.R. §1.98 duplicate copies were not provided. However, for completeness, copies of the cited references are submitted herewith.

REJECTIONS UNDER §112

The Office Action preliminarily rejects claims 28-32 as not enabled with the allegation that an election of the step of "filament winding" or "sheet rolling" around a mandrel to form a

shaft core is not disclosed. Applicant respectfully traverses. Applicant respectfully directs the Examiner's attention, for example, to page 9, ll.22 through page 10, ll.3, which states:

As illustrated in Figs. 5 and 6, embodiments of the invention include core 20 covered by outer layer 25. In one embodiment, a composite body 10 is made from a number of layers sheet-rolled or filament wound or a combination thereof to form core 20.

Applicant respectfully submits that this teaches the step of filament winding or sheet rolling a shaft core. Further, pages 7 and 8 of the specification generally teach that filament winding or sheet rolling is performed around a mandrel.

The Office Action additionally argues that, "the sequence of the step of placing a scrim layer around" is not disclosed. Applicant respectfully traverses. Applicant directs the Examiner's attention to page 11, ll.18-19, which states, "a scrim layer may optionally be placed as an outer mask on a shaft and may be clear to include a design." Applicant submits that this discloses, "placing a scrim layer around" the shaft. To the extent the Office Action is alleging that the question of whether the scrim layer is placed around the shaft *before or after removal from the mandrel*, is critical, Applicant respectfully disagrees that this is a critical issue to the present invention. Typically it is standard and well known in the industry to place the scrim on the basic shaft before removal of the shaft from the mandrel, but the scrim can also be placed after the basic shaft is removed. There is no functional or performance difference between these options.

In paragraph 10 of the Office Action, the Examiner alleges that, "The Applicant has disclosed the following embodiments: Embodiment 1: as shown in Figures 1-2E; Embodiment 2: as shown in Figures 3A and 3B; Embodiment 3: as shown in Figure 4; Embodiment 4: as shown in Figures 5 and 6; Embodiment 5: as shown in Figures 7-9; Embodiment 6: as shown in Figure 10; Embodiment 7: as shown in Figures 11A-11D." The Examiner then argues that,

“Embodiments 3 and 4 are contradictory” and that there is inadequate support of whether the invention requires the initial step of filament winding or sheet-rolling.

Applicant submits that this illustrates a fundamental misunderstanding of the present disclosure. For example, as described in the “Brief Description of the Drawings,” Figures 1-2E do not alone illustrate a specific embodiment of the present invention, but generally illustrate a golf club and the sheet rolling process. Similarly, Figures 3A and 3B do not alone illustrate a specific embodiment, but illustrate the filament winding process.

Figure 4 illustrates one embodiment with filament winding over sheet-rolling. Figures 5 and 6 do not contradict Figure 4, but generally illustrate “core 20 covered by outer layer 25.” (Spec. p.9, ll.22-23) One example of “core 20 covered by outer layer 25” is the sheet rolled core covered by filament winding of Figure 4. As described further in the specification, the core can be filament wound or sheet wrapped or a combination thereof. As another example, Figures 11A-D do not illustrate a “seventh” embodiment but diagrammatic views of four example filament wound or sheet rolled plies 110, 112, 114 and 116 as described in the specification. Applicant respectfully submits that the disclosure would be understood by those of skill in the art at the time the application was filed.

In paragraph 12, the Office Action rejects claims 28-32 under §112 second paragraph for, “The recitation of ‘filament winding or sheet rolling a plurality of fibers’ in Claim 1 [sic] makes the structure indefinite.”¹ The Office Action argues that it is not clear which of these steps is performed first and that, “it is not clear if the Applicant claims the use of ‘filament wound’ or ‘sheet-rolled’ plies or both in ‘one or more’ layers.” Applicant respectfully disagrees.

¹ Applicant assumes this refers to Claim 28.
Response to Office Action
Inventor Perryman, et al.; Serial No. 09/994,553
August 14, 2002
Page 6 of 16

Claim 28 indicates the step of forming a shaft core by filament winding or sheet rolling a plurality of fiber reinforced graphite plies. As an initial matter, Applicant respectfully submits that the word “or” indicates breadth, but not indefiniteness to one of skill in the art. *e.g.* “While the claim language under consideration may be broad, breadth is not indefiniteness.” Buell v. Beckestrom, 22 U.S.P.Q.2d 1128, 1133 (Bd. Pat.App.& Int. 1992) “Instead, the second paragraph of section 112 simply requires the claims to set forth and circumscribe a particular area with a reasonable degree of precision and particularity.” Id.

The initial step is forming the core. As described in the specification, the three possibilities for the layers in the core include 1) all filament winding, 2) all sheet-rolling and 3) a combination thereof (Spec. p.9-10). These are three specific and circumscribed alternatives described with sufficient precision for those of skill in the art. Use of “or” allows a choice between them, but does not make this indefinite. The MPEP states, “Alternative expressions using ‘or’ are acceptable,” MPEP §2173.05(i)(II). Moreover, once these three “core” options are understood, specific sequences of how layers are applied to form a combination core, in certain embodiments, is known as a matter of design choice in the art and is not critical to the present invention. Applicant respectfully requests withdrawal of this rejection.

Additionally, the Office Action raises for the first time the allegation that the phrase, “an amount of weight” in Claims 29 and 30 is indefinite. Applicant respectfully disagrees. As an initial matter, Applicant notes that this phrase was suggested by the Examiner as an acceptable alternative to the phrase, “a predetermined amount of weight” in the parent application hereto, and issued in the claims of what is now U.S. Patent No. 6,354,960. Further, Applicant respectfully submits that the word “amount” is sufficiently definite to enable those of skill in the art to understand the invention in view of the specification. *See, e.g., Exxon Research and*

Engineering Co. v. United States, 60 U.S.P.Q.2d 1272 (Fed. Cir. 2001) (use of “to increase substantially” or “for a period sufficient” was acceptable and does not render claims indefinite).

The exact amount of weight and its placement on a golf club shaft varies by individual and is a matter of personal preference in “tuning” the club to an individual player. As such, it is incapable of exact numerical definition; however, tuning a shaft by customizing the amount and placement of the weight is understood by those of skill in the art. Ex parte Skuballa, 12 U.S.P.Q.2d 1570, 1571 (BdPatApp&Int. 1989) (reversing a rejection of a method claim reciting “an effective amount” holding, “We are satisfied that the skilled worker in this art could readily optimize effective dosages and administration regimens for each of the recited utilities. As is well known, the specific dosage for a given patient under specific conditions and for a specific disease will routinely vary, but determination of the optimum amount in each case can readily be accomplished by simple routine procedures.”) Specific steps for customizing or “optimizing” the weight and placement on a golf club shaft is similarly well known and routine. Applicant respectfully requests that this rejection be withdrawn.

OBVIOUSNESS -- SECTION §103

In comparison to the parent case hereto, the Office Action for the third time recites a new combination of up to five references to allege that the claims of the present invention are obvious. Applicant respectfully disagrees as discussed below. Additionally, Applicant submits that the present Office Action does not give sufficient weight to the Declaration of Michael Perryman filed in the parent case and the remarks discussing it made in the Preliminary Amendment to the present application. Specifically the present Office Action does even

consider the Perryman Declaration addressing non-obviousness and the commercial success of the present invention. A copy is attached hereto for convenience.

Further, Applicant submits additional declarations and literature herewith from Brett Lindsey of Golfworks, Howard Miller of Swing Science and a supplemental declaration from Michael Perryman attesting to the continued commercial success of products manufactured using the process claimed in the present invention. These include C.E.R., NICK and DIAMET shafts manufactured by Rapport, which have achieved significant industry recognition and sales growth in a relatively short period. For example, as discussed in the declarations, new golf shafts introduced in 2002 and marketed on the basis of the technology of the claimed invention have had significant sales growth since their introduction, despite overall flat to negative market growth. (Golfworks Decl. ¶5, 6; Swing Science Decl. ¶5, 6 and Perryman Decl. of 8/12/02 ¶12, 13)

This commercial success is specifically due to the claimed process and features which is the marketing basis for the products. (Golfworks Decl. ¶4, 8; Swing Science Decl. ¶4, 5 and Perryman Decl. of 8/12/02 ¶9, 10) By eliminating other potential reasons, the Declarations provide evidence that the commercial success of the invention was directly fueled by the benefits of the claimed invention. Moreover, Applicant's products embodying the invention have gained significant industry publicity and recognition for solving a long-felt need. (Perryman Decl. of 8/12/02 ¶10, 11, 14) These facts provide compelling and un rebutted evidence that the present invention was not obvious to those of skill in the art.

To establish a *prima facie* case of obviousness, every element and limitation of the claim must be taught or suggested by the asserted reference or combination of references. "To reject claims in an application under section 103, an examiner must show an un rebutted *prima facie*

case of obviousness.” In Re Rouffet, 47 U.S.P.Q. 2d. 1453, 1455 (Fed. Cir. 1998). “In order to prevent a hindsight-based obviousness analysis, [the Federal Circuit has] clearly established that the relevant inquiry for determining the scope and content of the prior art is whether there is a reason, suggestion, or motivation in the prior art or elsewhere that would have led one of ordinary skill in the art to combine the references.” Ruiz v. A.B. Chance Co., 234 F.3d 654, 664 (Fed. Cir. 2000).

“A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one ‘to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.” In re Kotzab, 55 U.S.P.Q.2d 1313, 1316 (Fed. Cir. 2000) (citations omitted).

“[E]very element of a claimed invention may often be found in the prior art. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant.” Id. (citations omitted) “Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.” In re Dembiczak, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999).

The Office Action in the present case, recites elements individually from a number of references, but then generically states "it would have been obvious" to combine them. This does not satisfy the rigorous requirement of proving a teaching or motivation. As a generic allegation, "[t]he level of ordinary skill in the art cannot be relied upon to provide the suggestion to combine references." MPEP § 2143.01 (*citing, Al-Site Corp. v. VSI Int'l. Inc.*, 174 F.3d 1308 (Fed. Cir. 1999)).

McIntosh in view of Branen and Ebneith

Claims 28 and 29 stand preliminarily rejected over McIntosh, U.S. Patent No. 5,601,892, in view of Branen, U.S. Patent No. 4,135,035 and Ebneith, U.S. Patent No. 4,481,249. Applicant respectfully traverses.

Applicant respectfully submits that McIntosh in view of Branen and Ebneith neither teaches nor suggests every element and limitation of claims 28 and 29 or their dependent claims and no prima facie case has been shown. The Examiner has provided no evidence of a teaching or suggestion to combine the references other than as impermissible hindsight. In contrast, the Perryman Declarations and commercial success provide evidence that such a teaching was not obvious. (*see, e.g., Perryman Decl. of 8/12/02 ¶¶15-17*)

In paragraph 14, the Office Action states,

McIntosh fails to disclose a filament wound ply. Branen teaches the use of a filament wound ply and filament fiber tape (Column 2, lines 26-27 and 35-5). Ebneith teaches the use of nickel-coated fibers and sheets (Abstract; Column 1, lines 43-45; Column 2, lines 11-13; Column 3, lines 10-20.) It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teachings of Branen and Ebneith in the McIntosh device to improve the structural properties of the golf club shaft.

The generic conclusion that "it would have been obvious" for the general goal of "to improve the structural properties" is insufficient to prove obviousness. Applicant respectfully submits that in fact combining these references is improper. 0

For example, the Office Action cites to Column 2, lines 1-66 of Branen alleging a discussion of use of a fiber tape. Applicant respectfully submits that this does not teach or suggest the controlled filament winding of the present invention. As discussed in the introduction to Branen, "The goal generally, is to provide the stiffest, lightest shaft possible." In contrast, as discussed in the Perryman Declarations, this teaches away from the present invention. Applicant's invention is addressed to controlling feel and balance as independent variables by adjusting stiffness and/or weight to tune a golf club shaft. For example, as discussed in claim 29, the present invention suggests *adding* an amount of weight to a shaft. Applicant's goals contradict the teachings of Branen. (*see, e.g.*, Perryman Decl. of 8/12/02 ¶16)

For the first time after several searches in the parent case hereto, the Office Action cites Ebneith in an "obvious" combination. Applicant respectfully submits that Ebneith has no teaching or suggestion to combine it with McIntosh or Branen.

"The notion ... that combination claims can be declared invalid merely upon finding similar elements in separate prior patents would necessarily destroy virtually all patents and cannot be the law under the statute, §103." Ruiz v. A.B. Chance Co., 234 F.3d at 666, *quoting*, Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1575 (Fed. Cir. 1987). For example, Ebneith has co-existed with McIntosh and Branen for a number of years, but until the present rejection, no such combination has been made in the patent office or in the industry. In contrast to the Examiner's summary conclusion of an obvious combination, the Federal Circuit has noted that, "Indeed, that the elements [of the invention] lay about in the prior art available for years to all 0

skilled workers, without, as the court found, suggesting anything like the claimed inventions, is itself evidence of nonobviousness.” Ruiz v. A.B. Chance Co., 234 F.3d at 666, *quoting*, Panduit Corp., 810 F.2d at 1577.

Ebneth generally teaches a material: “Metallized Carbon Fibres And Composite Materials Containing These Fibres,” but does not teach or suggest the required elements of the claimed invention. Ebneth focuses on a completely unrelated goal from the present invention -- improving the “interlaminar shear strength” in adhering carbon fibers to plastics. “It has now been found that carbon filaments or fibres and sheets manufactured therefrom, may be obtained with excellent characteristics of adherence to plastics without any loss in their tensile strength if they are first provided with a metal coating by a current-less process.” (Ebneth, Col.1, ll.34-39)

Ebneth discusses carbon fibers and nickel, but makes no reference to golf club shafts. Ebneth, similarly makes no reference to using such fibers in filament winding to add weight to a product. In fact, Ebneth implicitly teaches away from filament winding by suggesting that the carbon fibers and filaments it discusses are manufactured into sheets for use. (Col. 1, ll.34-36) The mere fact that Ebneth exists and that it discusses carbon fibers and nickel does not make it obvious to combine it with the references of McIntosh and/or Branen.

The Office Action admits that McIntosh, “fails to disclose the use of a filament wound ply using metal-coated fibers.” As apparently also recognized by the Examiner in citing Ebneth, neither McIntosh nor Branen alone nor in combination themselves suggest filament winding an outer ply with metal coated fibers. More importantly, the Office Action points to no evidence why Ebneth and Branen should themselves be combined. The mere fact that Ebneth and Branen exist does not illustrate a teaching to combine them to form a “filament wound ply using metal coated fibers,” – an element admittedly not taught by McIntosh. In fact, the Perryman

Declarations provide evidence that such a combination is not obvious. Nevertheless, the Office Action broadly concludes that "it would have been obvious." Applicant submits that a combination of all three patents is only a theoretical permutation suggested with the benefit of impermissible hindsight. Applicant requests withdrawal of this rejection.

McIntosh In View Of Branen, Ebneith and Hoffmeyer

In paragraph 15, claim 30 is rejected over a combination of four references with the statement that, "Hoffmeyer teaches use of *non-uniformly* concentrating windings of predetermined weight in a predetermined location 4." (emphasis added) In addition to the reasons explained above, as pointed out in Applicant's preliminary remarks, but not addressed in the Office Action, this expressly contradicts the language of claim 30. Claim 30 expressly requires that the windings be *uniform*. Claim 30 requires, a shaft where "at least one outer ply having metal-coated fibers is uniformly wound over a portion of said shaft." Uniform windings over a portion of the shaft are illustrated in Figures 7-9, specifically showing smooth surfaces and eliminating the "bulge sections" taught by Hoffmeyer. Hoffmeyer does not teach or suggest a relatively broad, smooth area of concentrated weight which is an advantage of the claimed invention. (Declaration ¶ 16) Thus, as explained here and above, the recited combination does not teach or suggest the claimed invention. Applicant requests withdrawal of this rejection.

O
Agree

McIntosh In View Of Branen, Ebneith, Hoffmeyer and Chen

In paragraph 16, claims 31-32 are preliminarily rejected in view of the combination of five references – McIntosh, Branen, Ebneith, Hoffmeyer and Chen. Applicant respectfully submits that such a combination does not teach or suggest the claimed invention as explained above, and further that the addition of Chen still does not teach or suggest all of the elements of claims 31 and 32.

The Office Action admits, "However, the modified McIntosh device fails to disclose that winding of metal-coated fiber in different locations. [sic]" (Office Action ¶16) The Office Action alleges that, "Chen teaches the use of a golf shaft 10 with (Figure 1, Column 5, lines 14-25) with concentrated windings of fibers near hosel portion 10c and near the grip portion 10a." As with Hoffmeyer, Applicant respectfully submits that this does not address the actual elements of claims 31 and 32.

Specifically, claim 31 requires that, "said outer ply having metal-coated fibers is uniformly filament wound around said hosel portion for a distance approximately one third or less of the shaft's length;" claim 32 is parallel with respect to grip portion. As illustrated in Figures 7-9 of the present application, this is a smooth winding over a relatively broad shaft portion. As discussed above, one goal of the present invention is to smoothly add weight and soften the feel without increased diameter "bulges." In contrast, Chen teaches a shaft made as light as possible, where the shaft is, "*built up* to form three separated tapered *increased diameter nodes* along the shaft." (Claim 1, Col. 6, ll.64-65, emphasis added)

Chen's suggestion is, "to selectively stiffen and build up three tapered nodes 10a, 10b, and 10c shown in Fig. 2 to allow the shaft to flex at a pre-selected point along the shaft." As illustrated in Chen's Fig. 2, Chen's teaching of "built up" nodes directly contradicts the "uniformly filament wound" requirement of claims 31 and 32. Moreover, Chen functions in a substantially different manner than the present invention by selectively placing two built up nodes to form a pre-selected "flex point." In contrast, the uniform winding of the present invention in claims 31 and 32 minimizes this concentration by spreading the fibers and weight over a significant portion, such as approximately one-third or less, of the length of the shaft.

Finally, while Chen is related to golf shafts, again the Office Action fails to provide any evidence of a specific teaching to combine Chen with McIntosh, Branen, Ebneith and Hoffmeyer. Applicant respectfully requests withdrawal of this rejection.

Conclusion

Applicant submits that the Examiner has improperly combined references and generically concluded that the present invention is obvious, while failing to provide the evidence required to rigorously support a prima facie case of obviousness as required by law. In contrast, Applicant's factual evidence submitted previously and herewith proves the commercial success of the present invention and its success in the golf shaft market. This commercial success is directly due to the benefits of the claimed invention, and directly contradicts an allegation of obviousness.

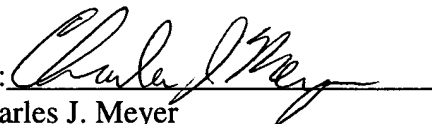
Applicant requests that these rejections be withdrawn.

NEW CLAIMS

New claims 53-61 have been added to further point out and clarify the present invention.

Applicant respectfully submits that all the pending claims are allowable and respectfully requests their approval. The Examiner is invited to contact the undersigned directly if it would be helpful to the advancement of this case.

Respectfully submitted,

By: 
Charles J. Meyer
Reg. No. 41,996
Woodard, Emhardt, Naughton,
Moriarty & McNett
111 Monument Circle, Suite 3700
Indianapolis, Indiana 46204-5137
(317) 634-3456